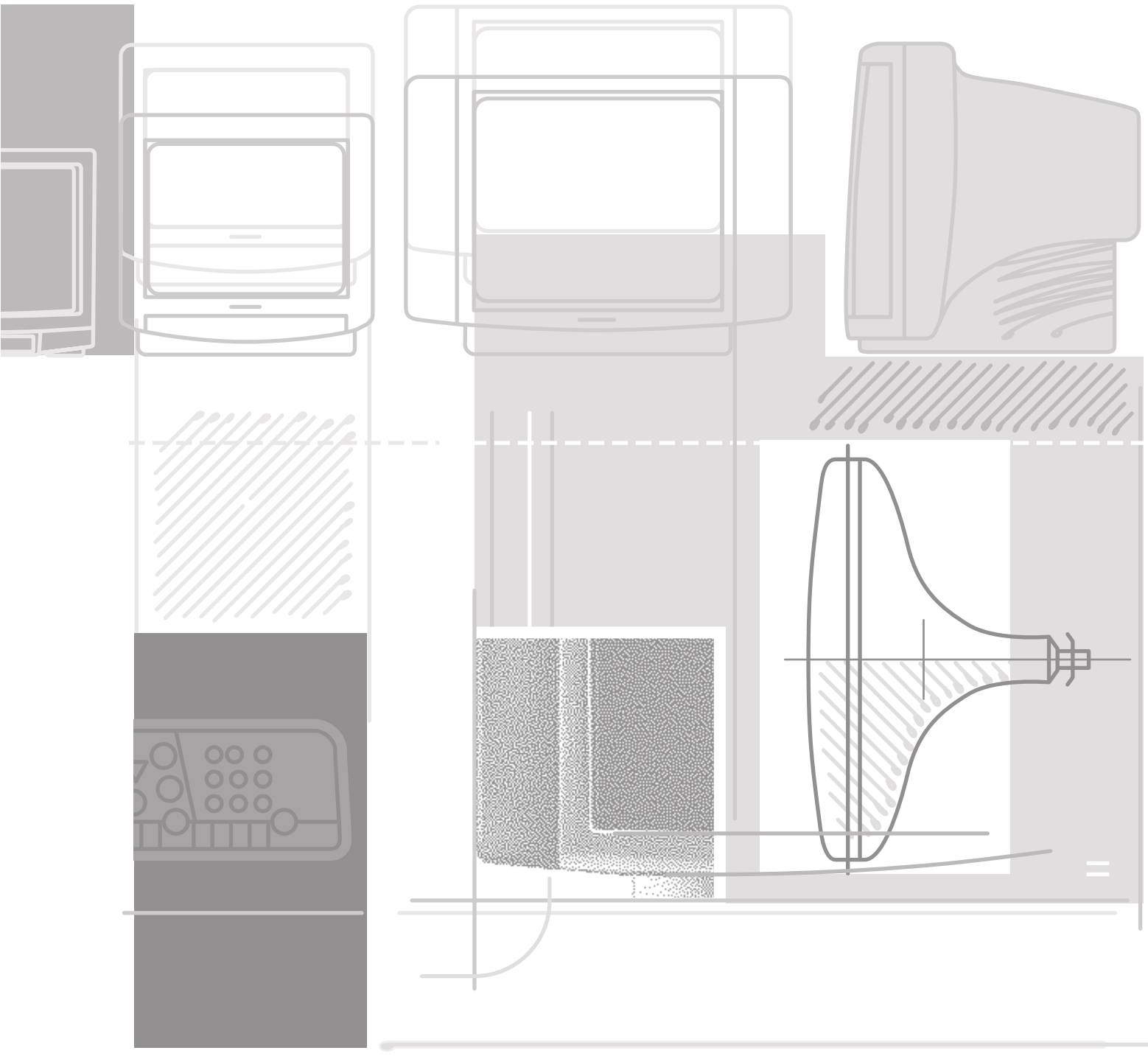
GRUNDIG

COLOR TELEVISION

M 82-169 PALplus



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If a specialized dealer has already set up and adjusted the television, start with page 8 of this manual.

GB

F

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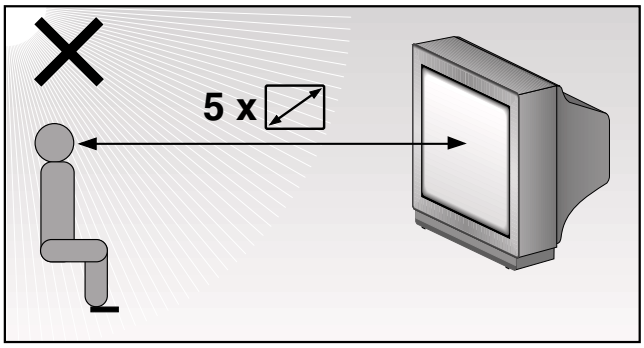
Notes on Safety and Installation



When setting up your television, select a location where as little light as possible falls on the screen.

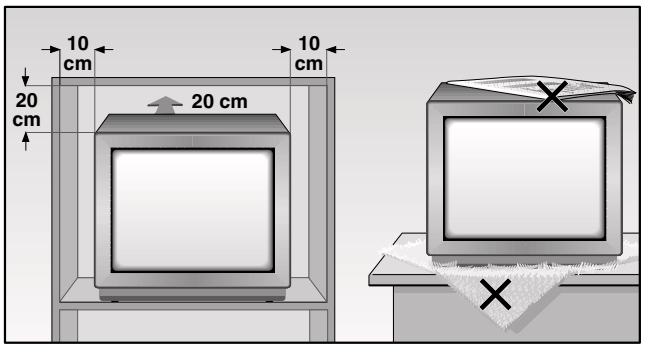
The ideal viewing distance is five times the diagonal width of the screen.

If the television is to be built into a compartment or similarly enclosed, minimum distances must be maintained.

Do not cover the ventilation openings on the back.

The heat exchange inside the unit generates an air circulation. which attracts dust particles (carpet and curtain fibres and home dust). These particles accumulate inside the ventilation slots obstructing these over the years and causing a build-up of heat.

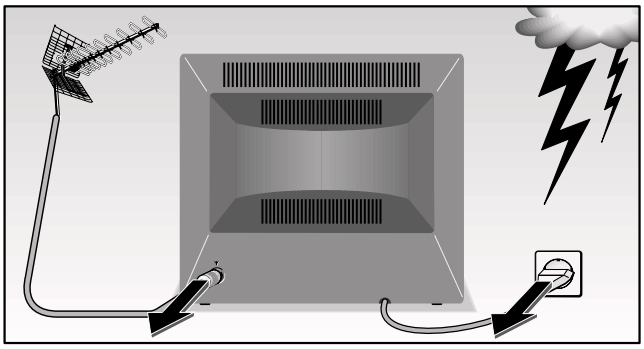
Heat build-up can reduce the service life of your television, and can also be dangerous.



For your own safety, let remove the dust deposits by a specialist from time to time.

Never set up speakers next to the unit.

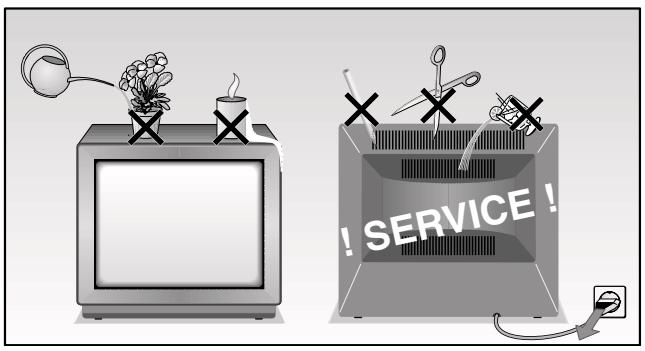
When setting up and using this unit, please make sure that the mains connection lead is free and not jammed in order to avoid damage.



Never place the television near heat sources.
Even if your television is switched off, it can still be damaged by lightning striking the mains and/or aerial cables.
For this reason, you should always disconnect your television from the mains and the aerial system during thunderstorms.

Never expose the unit to moisture.
Do not insert foreign objects into the ventilation openings on the back.
Caution! High voltage!

The TV receiver is provided with a Megatron-picture tube with a special surface layer.
This layer increases the contrast and reduces reflections.
A further advantage is the antistatic effect, i.e. the surface does not attract dust particles. When the set is switched on, static charges of the picture screen are avoided to a large degree by the special surface layer.



Clean the picture screen of your TV set only with a moistened soft cloth.
Use clear and clean water only.
When cleaning the picture screen, do not apply pressure (abrasion, scratches).

Do not stick labels of any kind onto the picture screen.

The strength of the magnetic field of the earth is not uniform. According to the direction in which your TV set is placed, it can influence the colour purity of the picture screen.

For this reason, make sure not to move the TV set during operation.
This might falsify the picture colours.

Always switch the set off when transporting it to another location.

Connecting and Setting Up

Connecting the Television

Connecting the unit to the aerial

Plug the aerial cable into the aerial socket Y on the unit.

This highly digitized TV set provides optimum picture and sound quality.
For this, the following conditions must be met:
Correctly functioning aerial system and connecting leads with high screening factor (85 dB) between the TV set and the aerial socket, and between the TV set and the video recorder, respectively.
Avoid cable loops near the TV set.

Connecting the unit to the mains

Plug the mains cable into the wall socket.

Additional Information for Units sold in Great Britain

Units sold in GB are suitable for operation from a 240 V AC, 50 Hz mains supply.

In case this appliance is supplied with a Safety Standard Approved mains lead fitted with a non-rewireable 13 Amp mains plug which, if unsuitable for your socket, should be cut off and an appropriate plug fitted by a qualified electrician. The fuse and fuse holder must be removed from the plug as accidental insertion of the redundant plug into a 13 Amp socket is likely to cause an electrical hazard.

Note: The severed plug must be destroyed to avoid a possible shock hazard should it be inserted into a 13 Amp socket elsewhere.

If it is necessary to change the fuse in the non-rewireable plug, the correct type and rating (5 Amp ASTA or BSI approved BS 1362) must be used and the fuse cover must be refitted. If the fuse cover is lost or damaged the lead and plug must not be used until a replacement is obtained. Replacement fuse covers should be obtained from your dealer.

If a non-rewireable plug or a rewireable 13 Amp (BS 1363) plug is used, it must be fitted with a 5 Amp ASTA or BSI approved BS 1362 fuse. If any othe type of plug is used it must be protected by a 5 Amp fuse either in the plug or at the distribution board.

Important:
The wires in the mains lead are coloured in accordance with the following code:

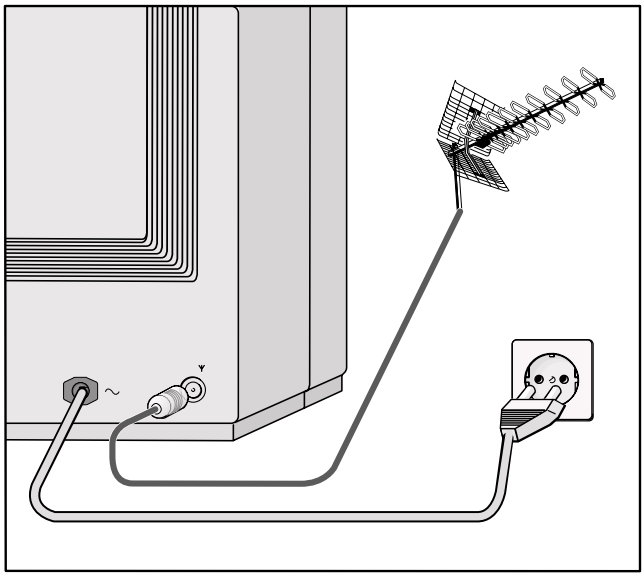
BLUE – NEUTRAL
BROWN – LIVE

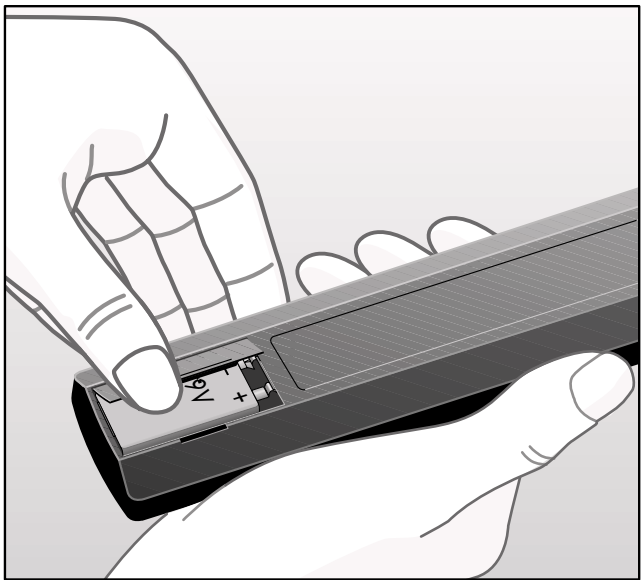
As the colours of the wires in the mains lead of your appliance may not correspond with the coloured marking identifying the terminals in your plug, proceed as follows:
Connect the BLUE coloured wire to plug terminal marked with the letter "N" or coloured black.
Connect the BROWN coloured wire to the plug terminal marked with a letter "L" or coloured red.
In no circumstance must any of the wires be connected to the terminal marked with a letter "E", earth symbol ⏚ , coloured green or green and yellow.

Replacement mains lead can be obtained from your dealer.

Inserting the Battery into the Remote Control Handset

Remove the battery compartment cover by pressing on the catch and then removing the cover.





Insert the battery supplied. Make sure it is inserted correctly (note the markings in the battery compartment).

When the battery is dead, the following display appears on the screen: "Battery Telepilot".
Dead batteries must be removed immediately.
We assume no responsibility for damage resulting from battery leakage.
Dead batteries should be disposed of properly (environmental protection).

Switching the Unit On and Off

Press the ⏻ button on the television.

If you do not use the televison for extended periods of time (e.g., at night), press this button to turn the televison off. This helps you to save energy.

Assigning Programme Positions

The Automatic Tuning System "ATS euro plus"

After switching on the television set, the "ATS euro plus" page appears.

If this page does not appear, press and hold down the P/C button until the "ATS euro plus" page appears on the screen.

The dialogue line at the bottom of the screen is used as user guide.
It indicates the buttons on the remote control handset with which it is possible to change settings.

Your television is equipped with "ATS euro plus" (Auto Tuning System). This new system offers you the advantage of automatic programme position assignment.
This search and memory system scans the entire reception range, stores the channels found, and enters them with their respective station name (abbreviation) into a TV station table.

You can change the automatic programme position assignment as you wish and, for channels without identification, you can choose a name (station name) in a list of abbreviations displayed on the screen and assign it the channel.

Press the following buttons on the remote control handset	You will see this on the TV screen	Explanations
1. User guide language a) Select a language ◀ ▶ or b) confirm OK		You can choose between several languages for the on-screen dialogue with your television. After you select a language, all menu guide messages and information will appear in this language. German (**D**) is preset at the factory.
2. Country (location) a) Select a country ◀ ▶ or b) start ATS OK		The "ATS euro plus channel search" is started. The television searches for all available channels, sorts, and stores them on the programme positions. This procedure can take one minute or more, depending on the number of channels that can be received. When the search procedure is completed, the TV station table will be displayed on the picture screen.

Assigning Programme Positions

Press the following buttons on the remote control handset	You will see this on the TV screen	Explanations

3. If your location is F

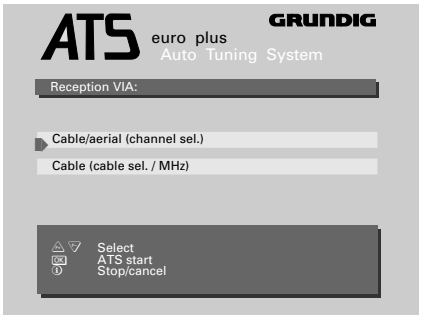
a) Setting for aerial or cable system with standard channel spacing

P– or P+

b) Setting for aerial or cable system with different channel spacing

P– or P+

OK



If you select "F" as country, this menu wil be displayed.
It allows you to select between "Cable/area (channel sel.)" and "Cable (cable sel. / MHz) for the ATS function.

In case a), select "Cable/area (channel sel.)". After having pressed the OK button, the ATS will search for channels on which programmes are received.

In case b), select "Cable (cable sel./ MHz)". After having pressed the OK button, the ATS will search for frequencies on which programmes are received.

If you are in doubt, consult your specialized dealer.

4. Changing the order of the channels ("move")

a) Select the programme position

P– or P+

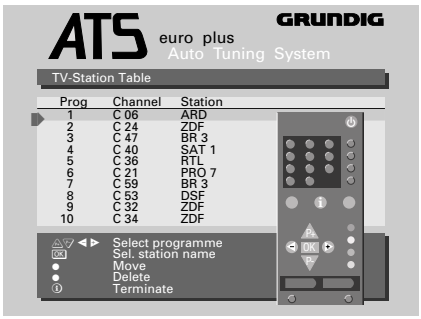
b) Highlight the programme position

(yellow button)

c) Select new programme position (move)

P– or P+

OK



Check the order of the TV channels in the "TV Station Table".

If you are not satisfied with the order, you can change it.

Repeat this procedure for the remaining TV channels if necessary.

Assigning Programme Positions

Press the following buttons on the remote control handset	You will see this on the TV screen	Explanations

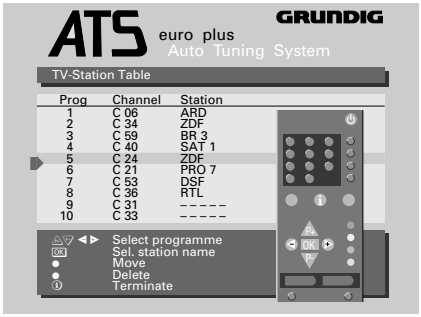
5. Clearing the data of a channel position

a) Select the programme position.

P– or P+

b) Clear the data.

○ (red button)



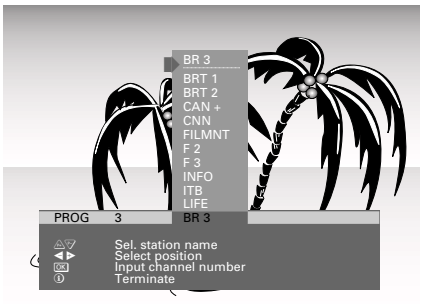
6. Changing a channel name or re-naming it.

a) Select the programme position.

P– or P+

b) Call up the list of channel names (abbreviations).

OK



If you cannot find the desired name in the list, you can enter your own. In order to do so, press the ▶ button once, and using the P– or P+ button, select the desired letter/number.

Press the ▶ button to select the next position.

Press the ⓘ button to terminate this procedure.

c) Select the new channel name.

P– or P+

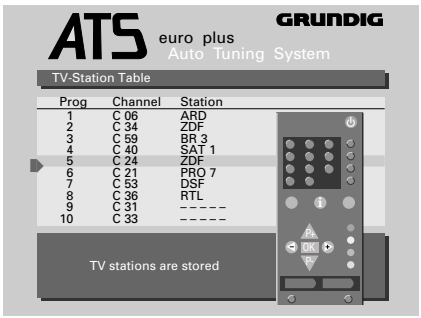
d) Terminate

ⓘ

7. Terminating the adjustment

a) Store new channel allocation.

OK



Assigning Programme Positions

ATS euro plus – Update

If you have already found and stored in memory channels with "ATS euro plus" and wish to start a new ATS euro plus search (for example, when you have changed your location or are connected to a cable TV system at a later date), press the P/C button for approx. 4 seconds. The following display will appear on the picture screen:

You can select between "Update" and "Restart".

Select "Update" if new channels are offered,
and "Restart" in the case of relocation or connection to a cable TV system.

For making further adjustments, refer to the indications given in the dialogue line.

If you have selected "Update", the indications concerning the language and country are omitted.

The newly found channels are added to the station table and marked in red.

You can "displace" the channels to move them to the desired channel (programme) position.

If "Restart" has been selected, channel allocation will newly be done. The existing channel allocation data is cleared (see also pages 5 to 7).

Call up the memory function by pressing the i button and store the new channel allocation by pressing the OK button.

Assigning Programme Positions Manually

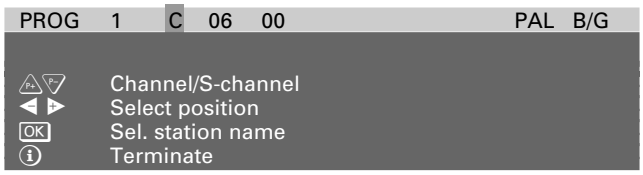
Example:

You wish to assign a programme which is transmitted on special channel S 08 in SECAM standard to the channel position 15.

How to proceed:

Select channel position 15.

Press the P/C button.



Follow the dialogue lines.

In the channel position data line, the letter C (for channel) is highlighted in yellow.

Press the P+ button.
C changes to S (for special channel).

Press the ▶ button.
The yellow highlight jumps to the channel entry position.

Press the buttons 0 and 8.
S 08 appears in the channel position data line.

> It is also possibile to select a channel by means of the **manual channel search**.
> To do this, press the P- or P+ button. The channel search is started and will stop at each channel which can be received.

Press the ▶ button twice.

On the picture screens appears in addition a list of the TV standards which can be received and reproduced by the TV set.
Press the P- or P+ button until the indication SECAM L is selected.

The unit tunes automatically to best picture quality.

Assigning the special channel S08 with the SECAM L standard to programme position 15 now is concluded.

It is also possible to assign a station name to this channel position.For this, press the OK button and follow the dialogue line!

Press the i button to return to the television picture.

In difficult reception conditions it may be necessary to adjust the picture by manual fine tuning.

Fine Tuning

Press the P/C button.

Press the ▶ button until the highlight has reached the 00 position (for fine tuning).

Use the P+ (63 steps) or
P- button (64 steps)

to adjust the optimum picture and sound quality.

The Remote Control Handset

On this page you will find a brief description of the remote control buttons. Refer to the corresponding chapters of this manual for information on operation.

⏻ Switch to stand-by

①…⓪ Channel selection and
⓪AV switching on the television from stand by or
– Selection of AV position
– Entry of page numbers in teletext mode

P/C Calling up programme data.
Keep the button depressed for 4 sec.: access to ATS.

AUX Preselect button for various functions:

ⓘ Call up the Infocenter.

P+ Individually switch channels. (1, 2, 3 ...)

P– Individually switch channels (... 3, 2, 1)

If one of the buttons P+ or P– is kept pressed, the station names scroll on the picture screen. When releasing the pressed button, the unit switches to the selected programme position.

or

P+ Move cursor up,

P– down

OK Change and activate various functions

◀ ▶ Volume,

or

◀ ▶ Move cursor left, right

– ◐ + Colour contrast

❍ VIDEO Video recorder remote control (keep ❍ VIDEO button depressed)

❍ PIP Picture-in-picture on/off

❍ 16:9 Change picture format 4:3 ↔ 16:9

❍ IDTV Access to IDTV menu

❍ Sound on/off (mute)
Access to Audio menu

Teletext mode ↔ TV mode

❍ Programme scan

❍ Freeze-frame

❍ Time on/off

❍ Current programme

– ☼ + Brightness

❍ SAT Satellite receiver remote control (keep ❍ SAT button depressed)

Remote control of a video recorder

You can also use the remote control of this television to operate a Grundig video recorder. Your specialized dealer can advise you as to which are suitable.

Keep the ❍ VIDEO button pressed down.
This switches the remote control to video recorder operation.
Now press the desired function button.
Refer to the following list for the functions which can be controlled by the individual buttons.

◀◀	(Numbered button 1)	= Reverse picture search
▶▶	(Numbered button 2)	= Forward picture search
●	(– ◐ button)	= Record start
■	(◐ + button)	= Stop
◀◀	(Numbered button 7)	= Fast rewind
▶▶	(Numbered button 8)	= Fast forward wind
❚❚	(– ☼ button)	= Pause
▶	(☼ + button)	= Start playback
▼	(Numbered button 4)	= Programme position –
▲	(Numbered button 5)	= Programme position +

Adjusting the Picture

Contrast, Sharpness, White Balance, Black Stretch, and Tint

Call up the "GRUNDIG Infocenter" by pressing the ⓘ and OK button.

The "Picture menu" line is highlighted in blue.

Press the OK button.

The "Picture menu" appears.

Select "Contrast", "Sharpness", "White bal." or "Black stretch" by pressing the P− or P+ button.

With transmissions in NTSC standard, "Tint" will appear in addition in the picture menu.

Adjust the setting by pressing the ◀ or ▶ button.

White balance

This function allows you to give the pictures a slight red or blue shade.

Press the P− or P+ button to highlight the "White bal." line.

Press the ◀ or ▶ button to change the setting.

Black stretch

This function increases the contrast range. In dark picture areas, the contrast is "streched". The picture gains in depth and contour.

Press the P− or P+ button to highlight the "Black stretch" line.

Press the ◀ or ▶ button to select "on" or "off".

This television was tested with maximum contrast to test the reliability of all components.
It is advisable to turn down the contrast to offer you the best picture quality depending on lighting conditions and where your TV is set up.

Brightness and Colour Contrast

To adjust the brightness and colour contrast, press – or + on the corresponding rocker button (☼, ◕) until you have reached the desired setting.

Adjust the brightness with −☼+.

Adjust the colour contrast with −◕+.

The corresponding scale appears on the screen.

The new settings are indicated.

Picture Format Switching

General

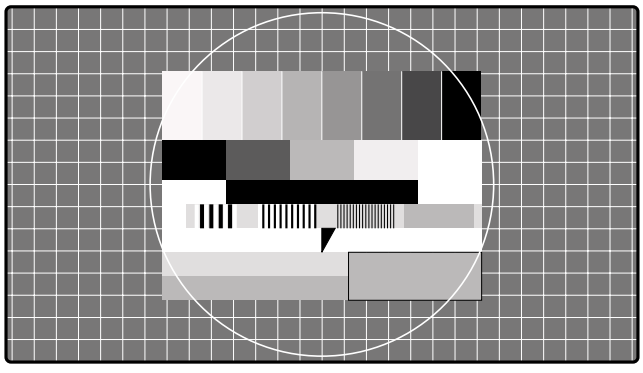
PALplus is the compatible further development of the PAL colour TV standard which has proved its reliability over tens of years. It has been realized by european radio stations and consumer electronics companies. With PALplus, programmes can be visualized in cinema format on the picture screen without disturbing black bars and with the full number of lines (side ratio 16:9). At the same time, colour restitution and picture sharpness have visibly been improved.

With a PALplus receiver, the recovery of a 16:9 picture with the full number of lines is possible by means of the "letter box conversion" with "Helper transmission" in the black marginal areas. Colour coding and decoding according to the Colorplus procedure enables an error-free separation of the brightness and colour information thus avoiding cross colour and cross luminance disturbances. Rainbow colours do not longer occur at high-frequency black/white transitions. In addition, the bandwidth of the transmission channel is optimally used. A television picture with highest sharpness is the result.

In relevant programme guides and in Teletext pages (ARD, ZDF), hints will be given with respect to PALplus broadcasts.

Operation

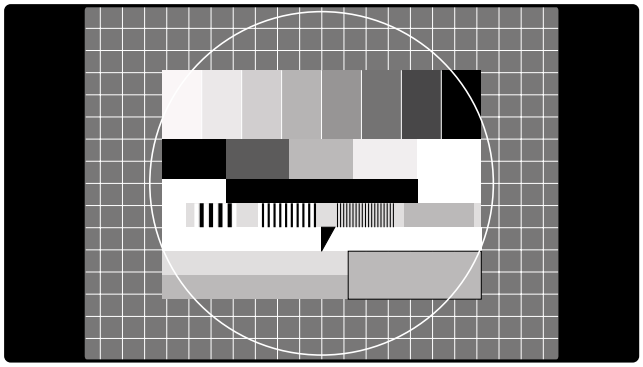
In the case of PALplus broadcasts, the TV set automatically switches to the PALplus format.



In the formats menu, "PALplus" is marked in colour.
This menu can be displayed by pressing the ❍ 16:9 button.

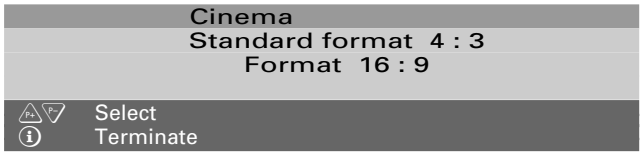
Adjusting the Picture

With broadcasts in conventional format (4:3), the picture screen of this set (16:9) will not completely be filled out.

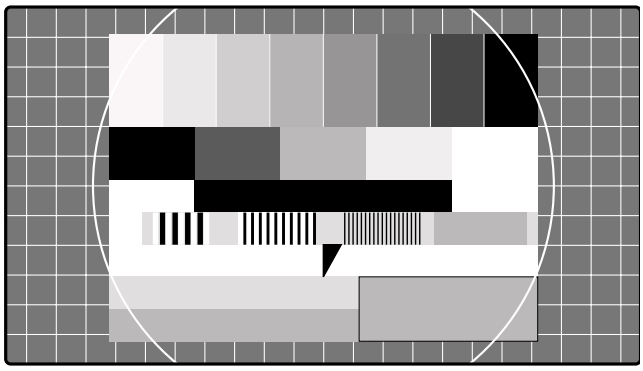


Black stripes are visible at the left and the right side of the picture.
To avoid this, you can switch to another format.
In the format menu, you can lay down which format is to have priority when switching on or changing the programme in the case of conventional standards (4:3).

At the factory, the "Cinema" format has been preset.



In the Cinema mode, 4:3 pictures are displayed over the whole picture screen.
This means that the pictures are enlarged in such a degree that the black stripes at the left and right sides disappear. However, picture information is lost at the top and the bottom of the picture, but the picture geometry is maintained.

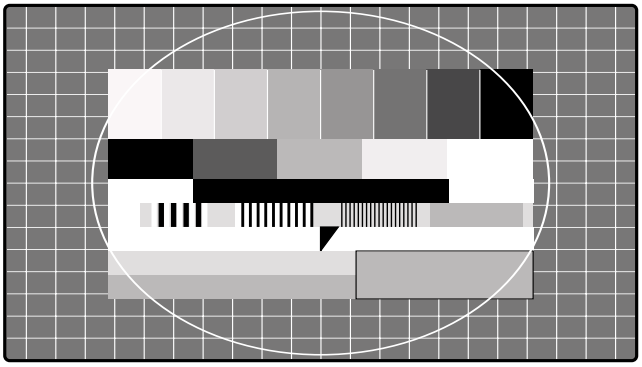


The advantage of this mode is that the black stripes at the top and the bottom of the picture which are obtained when wide-screen cinema films are watched on a "normal" television, are no longer visible.
For this reason, this mode is especially suited for wide-screen cinema films.

When such a film is over, the "Cinema" mode is maintained. If a PALplus broadcast is received, the TV set automatically switches to PALplus - in our example from Cinema - and back to Cinema when the broadcast is over.

Each manually selected function in the formats menu is automatically switched to PALplus if such a broadcast is received, and back to the previous format when the PAL-plus broadcast is over.

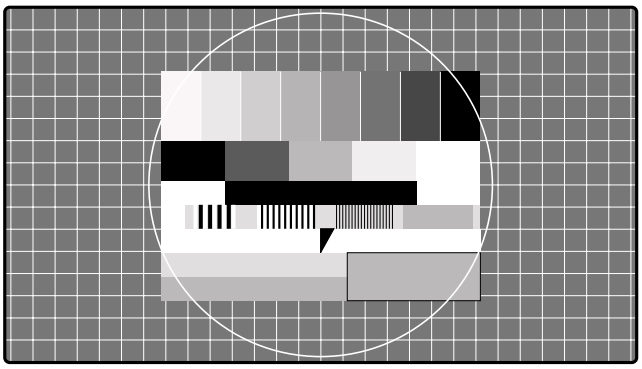
If you receive a broadcast in Cinema mode with missing indications in the upper or lower part of the picture (eg. scores in the case of matches), you can switch back to the 4:3 or 16:9 format so that these indications become visible again.



In the case of 4:3 broadcasts and the 16:9 format selected, the picture is horizontally enlarged.

The picture geometry is streched in horizontal direction.

If you receive pictures from a real 16:9 signal source by means of an external decoder (eg. Settop-Decoder of Digital TV System) via the Euro-AV socket, the picture screen is fully filled out with correct picture geometry.



Reception of PALplus broadcasts via a satellite-receiver

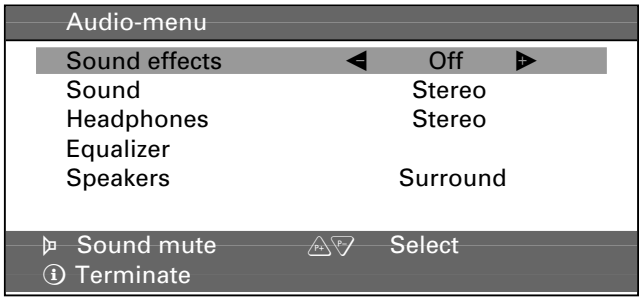
Connect the satellite receiver to the black EURO-AV socket.
Select a free programme position on the television receiver.
Select "Descrambler on Stereo" (see page 31," ...for Descrambler").
The PALplus broadcast is visible on the selected programme position. Condition for this is that a 12V switching voltage is present at Pin 8 of the EURO-AV socket of the satellite receiver.
The same adjustments and the same condition apply for the use of a comb filter (see page 27).

Adjusting the Sound

… with the Audio Menu

Calling up the audio menu

Press the ◯⊳ button.



The "Sound effects" menu option is described on page 16, the "Speakers" option on page 15.

Sound (stereo, two-channel sound, mono)

If your television is able to receive two-channel sound transmissions, for example when a film is broadcast in the original sound track on sound channel A2 (Mono B or NICAM B), and the synchronized version on sound channel A1 (Mono A or NICAM A), you can select the version you want to hear (indication: Mono or NICAM).

Your television automatically switches to stereo if the programme is transmitted in stereo (indication: Stereo).

If stereo reception is poor, you can switch to "Mono" and thus improve the sound quality (see example).

Example: To switch from "Stereo" to "Mono", highlight the "Sound" function with the P- or P+ button, then select "Mono" with the ▶ button.

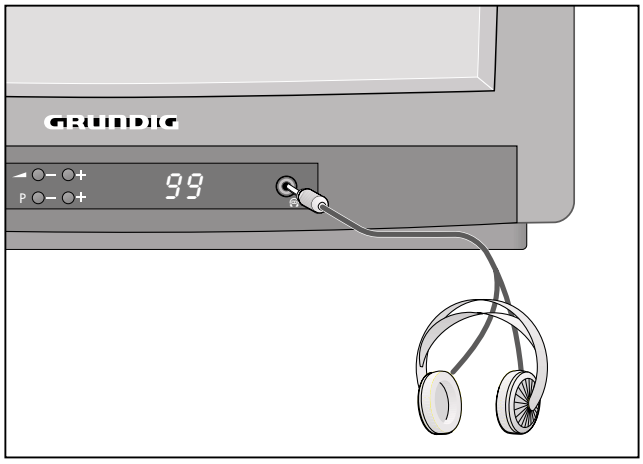
If you wish to always receive a channel in mono, enter ",MO" from the fourth position of the the station name on, for example, "ARD,MO" (see "Changing or renaming a station name" on page 7).

You can also change the sound setting without calling up the audio menu. To do so, press the AUX button and then the ◯⊳ button.

Headphones

Connection

Insert the headphones plug (3.5 mm ∅ jack) into the 🎧 socket.



When listening with headphones, it is also possible to select between stereo, two-channel sound, and mono.

The volume for listening with headphones is independent of the volume set for the loudspeakers of the television. For adjusting the headphone´s volume, press the AUX button then adjust with ◀ and ▶, respectively.

Equalizer

For individual tone control, the television is provided with a seven-band-equalizer.

In the mono, stereo, two-channel sound, and pseudo surround sound modes, it is possible to boost or cut the frequencies 0.1 – 0.3 – 0.5 – 1 – 2 – 4 and 12 kHz.

Call up and display the "Equalizer" function in the same way as switching from stereo to mono (see example in "Sound" chapter).

Boost or cut the frequencies with the P- or P+ button.

Press the AUX button to return to the basic values.

Dolby Surround Pro Logic

* Under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol ▯▯ are trademarks of Dolby Laboratories Licensing Corporation.

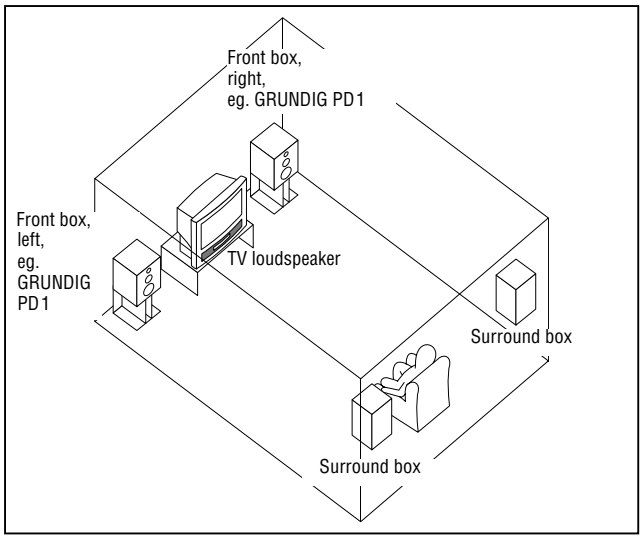
Important Information

This system has been developed to allow you to enjoy the dramatic realism and impact of multi-channel Dolby movie theater sound in your own home.
The Dolby Surround Pro Logic signal comprises:
Stereo channel (right/left)
Centre channel
Surround channel
With Dolby Surround, the sound created by the conventional stereo channels (right/left) is improved by an additional centre channel which makes it possible to precisely locate the origin of the individual tones.
This centre channel fixes the voices (dialogues) in the sound centre (corresponding to the picture).
The Surround channel (also called back channel) completes the sound system. Two additional loudspeakers which are located behind the listener create the actual "Surround" sound, that is the realistic sound atmosphere (depth of space, special effect sounds). The listener is "placed inside the action".
With the Dolby Surround Pro Logic system, the sound/picture sources can be laser discs, video cassettes, and television broadcasts.

Loudspeaker Systems for Dolby Surround Pro Logic

To get the optimum sound quality from the Dolby Surround Pro Logic system, four additional loudspeaker boxes are necessary.
The two Surround speaker boxes are supplied with the unit.
As front speaker boxes, we recommend the use of GRUNDIG PD 1 speaker boxes. These are optically and technically designed to match this television.

1. Loudspeakers with Dolby Surround Pro Logic

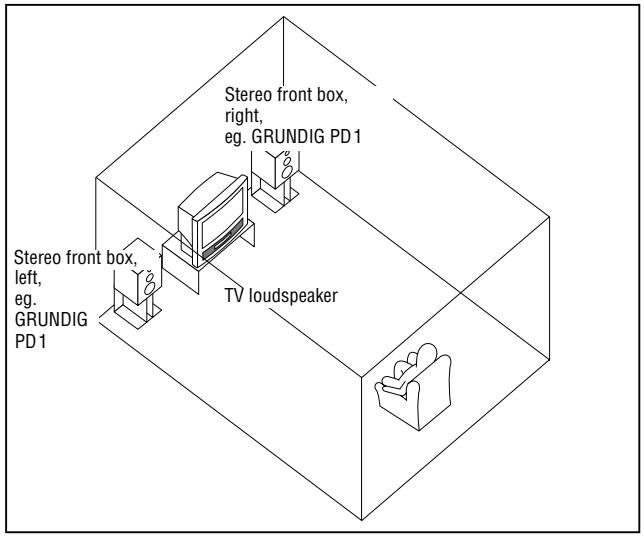


The front boxes should be placed at a distance of approx. 1.5 m from the television.

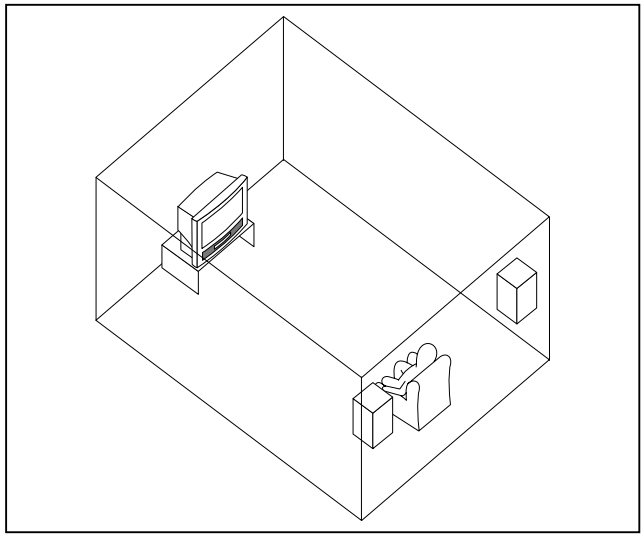
Loudspeaker Systems for the Other Dolby Operating Modes

If you cannot install four loudspeaker boxes, you can still use the following Dolby operating modes:
Dolby Phantom, or
Dolby 3 Stereo, or
Pseudo Surround.

2. Loudspeakers with Dolby 3 Stereo



3. Loudspeakers with Dolby Phantom and Pseudo-Surround

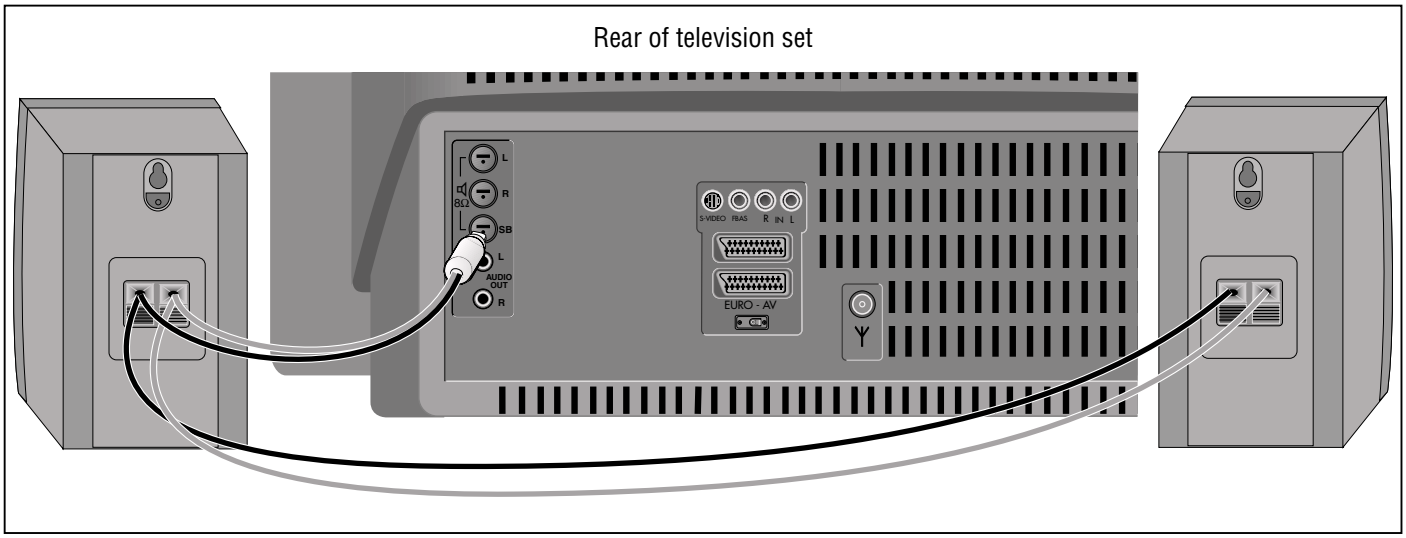


With these three operating modes, it is not possible to get the optimum sound impression such as with Dolby Surround Pro Logic.

Connecting the Loudspeaker Boxes

Connecting the surround boxes

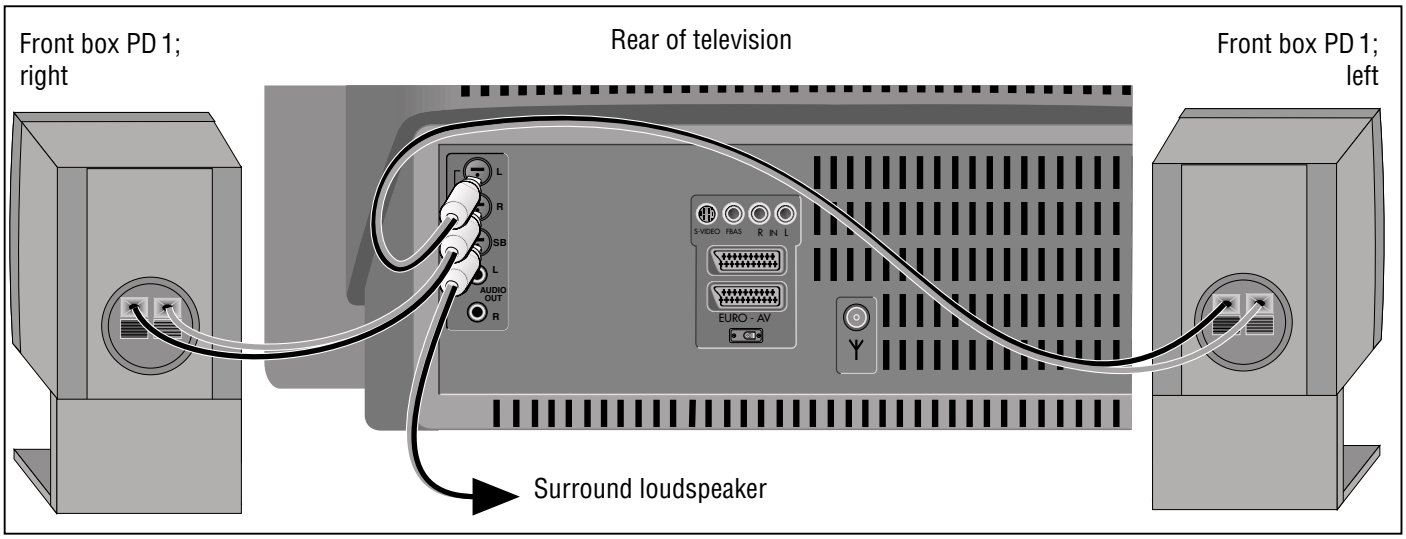
(supplied with the television)



Observe correct polarity!
Insert the grey core of the supplied twin-wire into the red clamping terminal, and the black core into the black clamping terminal.

Connecting the front stereo boxes

e.g., GRUNDIG PD 1 (optional accessory)



In the packing of the speaker boxes, you will find cables provided with plugs.
One core of the twin-wire has a grey marking.
Insert this core into the red clamping terminal, and the black core into the black clamping terminal at the back of the speaker box.
Connect the plug to the corresponding socket on the TV set (left box to "L", right box to "R").

HiFi output L AUDIO-OUT R

You can connect a hifi stereo system to these phono sockets to get a hifi quality of the television sound.

Audio Menu

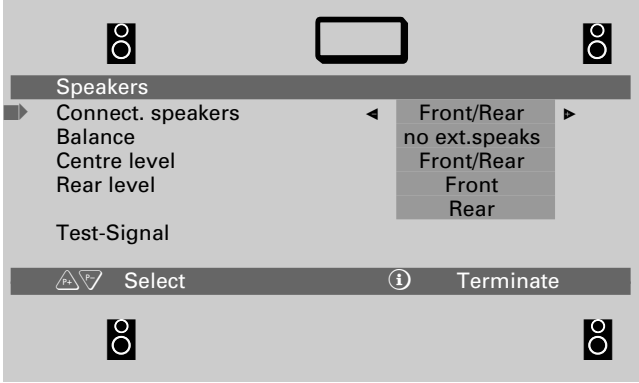
Press the ◯ button to call up the audio menu.

The "Speakers" menu option

In the "Speakers" submenu, you must indicate whether there are external loudspeakers connected to the television. If yes, you must indicate the loudspeaker system.
For this:
Pess the P button until "Speakers" is highlighted in colour.
Press the ⊕ button to call up the speakers menu.
A random configuration (graphical representation of a loudspeaker arrangement) is displayed.

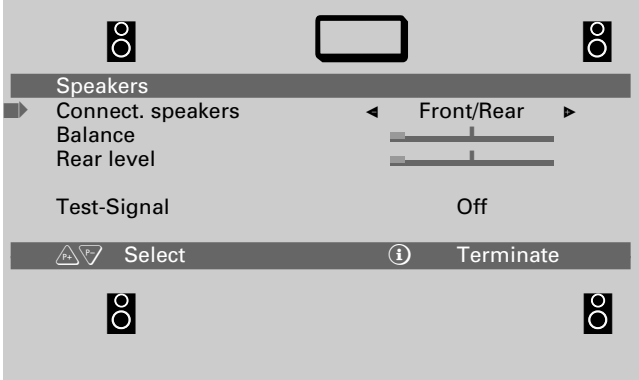
Press the ⊕ button to display a selection of speakers.

You can select between:



– No external speakers.
– Front and rear speaker boxes
(see illustration on page 13; 1. Loudspeakers with ...).
– Front speaker boxes only
(see illustration on page 13; 2. Loudspeakers with ...).
– Rear speaker boxes only
(see illustration on page 13; 3. Loudspeakers with ...).
Repeatedly press the P button until the desired configuration is displayed.

Press the ⓘ button.
When selecting, for example, "Front/Surr", the following menu is displayed.

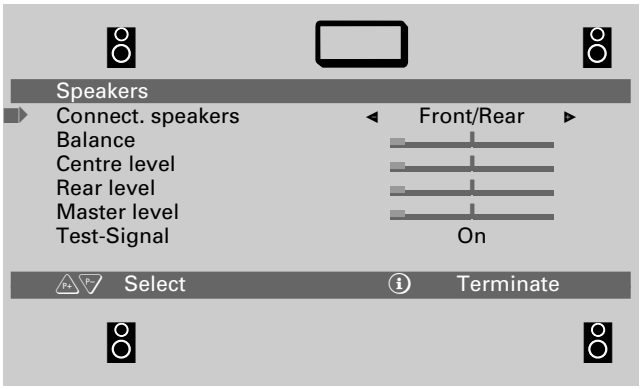


Adjusting (balancing) theTV loudspeakers and the connected speaker boxes to each other

After having selected the desired configuration, all loudspeakers and speaker boxes must be adjusted to each other. In the following example "Front/Surr.".

For this, the "Test Signal" option in the "Speakers" menu is provided.

Highlight the "Test-Signal" line with the P button and switch the function on with the ⊕ button.



You will hear the test signal (noise) from the loudspeakers.

The test signal is emitted in the following order:
Balance (right/left)
Centre level
Rear level

The cursor bar indicates which loudspeaker (box) is currently emitting the test signal.

It is possible to adjust only that speaker configuration which is currently highlighted in the menu (Front/Surr. in the example).

Adjusting the balance of the front speaker boxes

Wait until "Balance" is highlighted.

Then, use the ⊖ and ⊕ buttons to adjust the front boxes so that they have the same sound level (emit with equal volume level).
During the setting procedure, the cursor bar remains on the "Balance position".
The sound signal is emitted only by the front speaker boxes.

When releasing the ⊖ or ⊕ button, the cursor bar jumps to the next position in the test signal order.

Centre level (for Dolby Surround Pro Logic)
Rear level

Adjust in the same way as for the "Balance "menu option.

Master volume

After having balanced (equal volume levels) all loudspeakers and speaker boxes, it is possible to adapt the global volume level to the room requirements.

"Master level" is only indicated with "Testsignal on" and is manually to be selected.
The cursor bar does not automatically jump to this position.

Select with P- or P+, change the setting with ◀ or ▶.

After having terminated all adjustments, the test signal must be switched off.

Press the ⓘ button (terminate) to return to the Audio menu. Press again to return to the TV picture.

Audio Menu

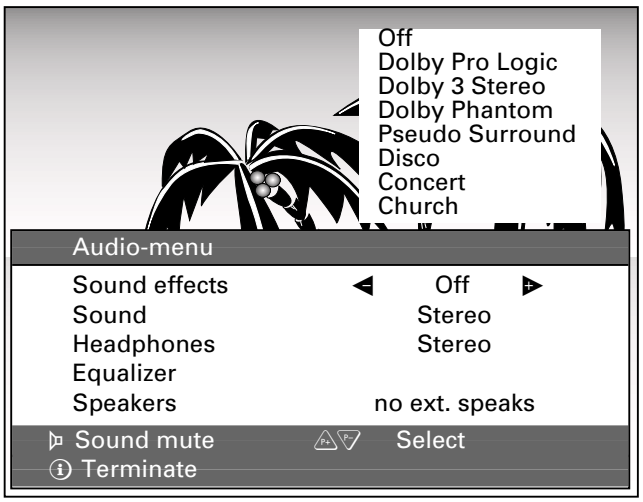
Sound effects

It is possible to add a selection of sound effects to each configuration (graphical representation of loudspeaker arrangement).

For this:
Press the ◯⊳ button to call up the Audio menu.

The cursor bar marks the "Sound effects" option.

Press the ▶ button to display the offer of available sound effects.



Dolby Pro Logic, Dolby 3 Stereo, Dolby Phantom

Dolby-Surround adjustments make only sense if the sound is received in stereo.

For example, if you receive a programme in stereo, the station transmits a corresponding signal and the TV set switches automatically to stereo sound.

For Dolby Surround Pro Logic, the TV stations are presently not yet tansmitting an additional VPS signal for automatic switching to this Dolby mode.

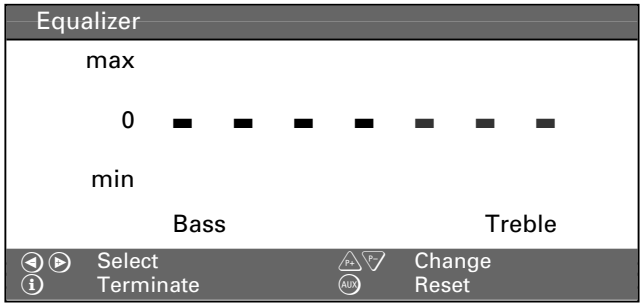
For this reason, we recommend you to search in a TV programme guide, which contains information about Dolby Surround, for these programmes, and to adjust your TV set accordingly at the times when these programmes are broadcast.

Sound effects DISCO, CONCERT, CHURCH

In addition to the Dolby Surround modes and the Pseudo Surround mode, the above sound effects are available.
It is possible to use these functions with Dolby Surround, stereo or mono broadcasts.
When selecting one of the sound effect functions, the last selected configuration with the associated Dolby mode is used.

Equalizer in Dolby surround mode

In the Dolby modes and with the sound effects, the equalizer function serves as tone balance control.
The Dolby signal is normed and has a linear characteristic.
See illustration.



A correction is normally not required.
The sound balance control should only be used to make corrections to compensate for acoustic irregularities of the room.
To do this, call up the Audio menu by pressing the ◯⊳ button.
Select "Equalizer" with the P- button.
Activate the "Equalizer" function with the OK button.
Change the frequencies as desired with the P- or P+ button.
Press the AUX button if you wish to reset the frequencies to their basic values (linear).

Teletext

Teletext is provided free of charge by television stations and is transmitted together with the television signal in the form of texts, graphic representations and subtitles which are visible on your screen.
Information pages and dialogue lines offered by your television make it simple to use teletext. The information in the dialogue lines indicates the various functions available as well as the buttons used for these functions.
Your television automatically switches to the different teletext systems (TOP, FLOF) offered by the television stations.

If the aerial signal is only marginal, teletext pages may exhibit disturbances. If finetuning the television brings no improvement, have your aerial system checked.

TOP-Text Mode

What is TOP-Text?

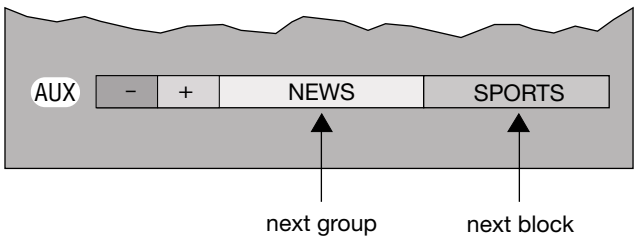
TOP-Text is an innovation which simplifies and accelerates the selection of teletext pages. TOP-Text stands for "Table Of Pages".

TOP allows you to select teletext pages without knowing their page numbers. TOP does this by arranging all the pages that are transmitted by the television stations according to topics, also called blocks, as in a filing cabinet.

For example, all news items are listed under "News". Further topics include the blocks "Sports", "TV Programmes" and "Services". These blocks in turn are divided into several groups; "News", for example, is divided into politics, economics, culture, etc.

The individual teletext pages are found within these groups.

The following illustration shows the dialogue line for a TOP teletext page.



TOP-Text takes you to the teletext page you want, quickly and simply.

Using TOP-Text to call up teletext pages

Preparation

Select the TV channel with the TOP-Text pages you wish to view.

Selecting teletext

Press the ▤ button.

The Contents Page 100 or the page you called up last appears on the screen.

A red, green, yellow, and blue text field are visible at the bottom of the picture.

You will find correspondingly coloured buttons on your remote control handset.

Pressing the red button returns you to the previous page.

Pressing the green button scrolls to the next available page.

Pressing the yellow button switches to the next group.

After reaching the last group of the block you selected, you automatically advance to the next block (overflow).

Pressing the blue button switches from block to block.

You can also call up the desired Telext page directly by entering the desired page number as three digits with the numeric buttons ①…⓪. The page appears.

Press the P/C button to return to the last viewed page.

Teletext

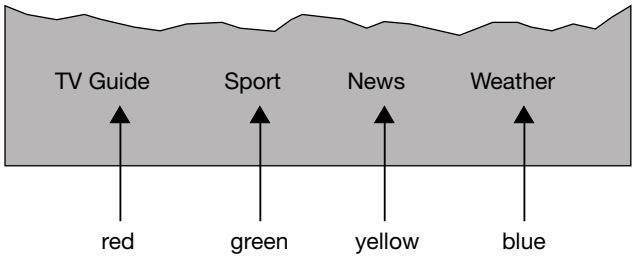
FLOF-Text Mode

What is FLOF-Text?

With FLOF-Text, you are guided by different colours that appear in the info-lines at the bottom of the screen.

These colours correspond to topics or pages that you can select using the coloured buttons.

The following illustration shows the dialogue line for a FLOF-Teletext page.

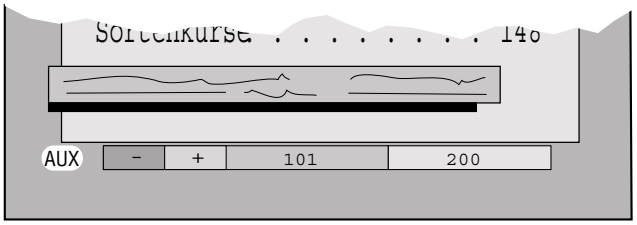


This way FLOF-Text takes you more quickly to the teletext page you want.

Teletext Without TOP and FLOF

The features

Here you select the teletext pages by entering the page number or by using the coloured fields and coloured buttons which correspond to page numbers. The illustration shows the dialogue line for a teletext page without TOP/FLOF-Text.



Calling up teletext pages by entering the page number

Preparation

Select the TV channel with the teletext pages you wish to view.

Selecting teletext

Press the ▤ button.

The Contents Page 100 or the teletext page you last viewed appears.

At the bottom of the screen you will see four coloured fields.

You can call up the available pages by pressing the corresponding button (red, green, yellow or blue).

You can also call up the desired teletext page directly by entering the three-digit page number with the numbered buttons ①…⓪ . The page appears.

Press the P/C button to return to the last viewed page.

Switching off teletext

Press the ▤ button.

Text-Setup

In the Text-Setup menu you can determine which page will appear when calling up the Teletext function (opening page) and on which page the TV programme offer is to be found. In addition, you can select between three language groups.

Press the AUX button.

Use the ◀ or ▶ button to select the ⇄ symbol

Press the OK button.

The Text-Setup menu appears.

Use the P- or P+ button to select the line "Opening page" or "Programme page" or "Language group".

Press the OK button to make changes.

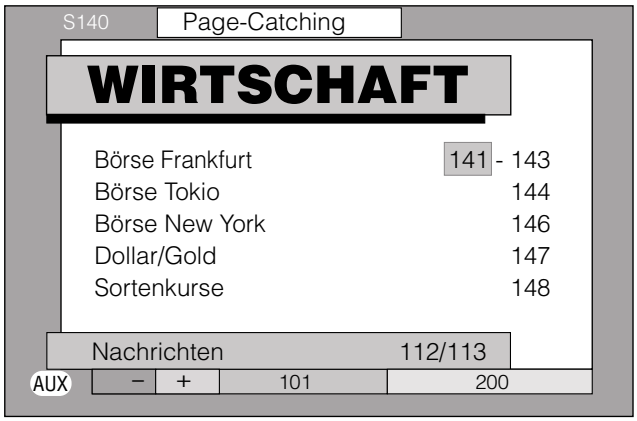
Follow the hints in the dialogue line.

Press the ⓘ button to switch off the menu.

Page-Catching

This function allows you to select a teletext page without entering the corresponding page number.

You can select desired teletext pages from the overview pages (pages designated with a three-digit page number).



Press the P− or P+ button.
Page-Catching" appears in the upper part of the screen.
The first or last page number of the overview is highlighted by a frame.

Press the P− or P+ button to move the frame to the desired page number.

Press the OK button.
The desired page appears on the screen.

"MEGATEXT" Menu Page

Press the ≡ and then the ⓘ button.

The "MEGATEXT" page appears.

This page provides you with an overview of the block and group pages currently offered by the teletext service. For teletext without TOP, only the numbers of the transmitted pages are displayed.

Select the desired line with the P−, P+, ◀ or ▶ button (block, group or page) and call it up by pressing the OK button.

The selected page appears.

Press the ⓘ button to make the "MEGATEXT" page disappear.

Current Programme

(Only for stations which provide teletext service).

While in TV viewing mode, press the red button. The title of the current programme and the current time will be displayed.

Press the ⓘ button to remove this information from the screen.

If additional information is offered for the current programme, call up the respective teletext page by pressing the OK button.

If subtitles are offered to the current programme, these can be visualized by pressing the yellow button.

Pressing the ≡ button brings you back to the programme overview.

Press the ≡ button to quit teletext.

Watching Television during Teletext Operation

Updating pages

Certain teletext pages are constantly updated, such as stock market reports and sporting events, as well as the latest news.

If you want to watch television and nevertheless remain informed, first select a page of your choice, and then

press the AUX button.

Select the ≡X symbol by pressing the ◀ or ▶ button.

Press the OK button.

The programme is still visible for viewing, and at the top of the screen, the teletext symbol ≡X appears.

When the message "Update" appears in the information line,

press the AUX button.
The updated teletext page appears.

You can also use this function to bypass waiting times while the TOP teletext decoder is searching for a page, or while sub-pages are being read in. As soon as the page is found, the message "Ready for call-up" appears in the info-line.

Doubling Character Size

Press the AUX button.

Select the symbol by pressing the ◀ or ▶ button.

Repeatedly pressing the OK doubles the character size in the following order:
upper half of the picture,
lower half of the picture,
return to normal picture.

It is also possible to perform this function with the right side of the ⊖⊙⊕ rocker button without calling up the dialogue line.

Subpages

Several subpages can be combined under a single page number which are then automatically scrolled at an interval determined by the television station. This is indicated by the symbol ≫ at the bottom right, or, for example, with 2/4 below the time, which indicates that you are looking at the second of four subpages.

Reading in multiple pages

A multiple page is selected.

Press the AUX button.

Select the symbol with the ◀ or ▶ button.

Press the OK button.

At the lower picture edge, between the ◀ and ▶ button symbols, first the page number of the subpage currently visible on the picture screen is highlighted on yellow background. Then the remaining subpages are read in.

With the ▶ button, you can switch forward to the following subpage, and with the ◀ button back to preceding subpage. Press the OK button to cancel this function.

Calling up subpages directly (alarm page)

A multiple page has been selected.

Press the AUX button.

Select the symbol by pressing the ◀ or ▶ button.

Press the OK button.

Select the symbol by pressing the ◀ or ▶ button.

Using the numbered buttons, enter the desired four-digit subpage number. For example, enter the sequence 0002 for the second page. The desired subpage is sought and displayed.

The selected page number, for example 155/0002, appears in the info-line.

Press the OK button to deactivate this function.

It is also possible to perform this function with the left side of the ⊖⊙⊕ rocker button without calling up the dialogue line.

Answer

This function can be used on certain teletext pages to solve riddles during a televised programme, for instance, or for programming a video recorder via VPS pages.

Press the AUX button.

Select the symbol by pressing the ◀ or ▶ button.

Press the OK button;
the hidden information becomes visible.

Press the OK button;
the "answer" function is deactivated.
It is also possible to perform this function with the ▶ button without calling up the dialogue line.

Stop

Page read-in and update are stopped.

Press the AUX button.

Select the symbol by pressing the ◀ or ▶ button.

Press the OK button;
Stop appears in the top of the screen. The contents of the displayed page are now "fixed", meaning that it is no longer updated, and you remain on this page.

Press the OK button;
the "stop" function is cancelled.

It is also possible to perform this function with the ◀ button without calling up the dialogue line.

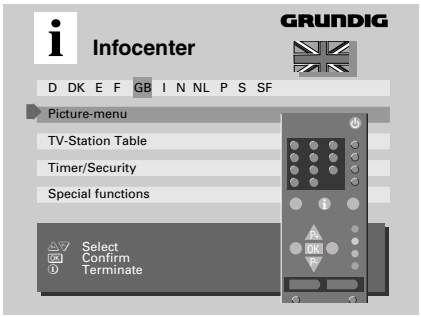
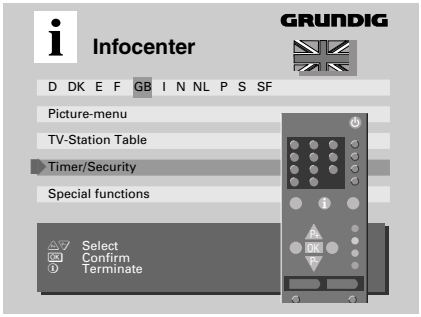
Current Small Picture in Teletext

While using Teletext, a small picture can be displayed in the top right corner of the picture screen showing the current contents of the selected programme position.

For this, press the ○ PIP button.

Timer/Security Functions

This is for entering and storing
a switch-off time (Sleep Timer),
or a code number (Security-Code) which allows you to either
block child-endangering broadcasts, or
block all television programmes.

Press the following buttons on the remote control handset	You will see this on the TV screen	Explanations
1. Call up the "GRUNDIG Infocenter". i OK		By pressing the i button, you can return to the current programme at any time.
2. Call up the "Timer/Security" line. P– P– a) confirm OK		Choose one of the following functions: 3.1 Block programmes unfit for children. (The signal for this is not yet transmitted by all programme offerers). 3.2 Block all programmes. 3.3 Sleep Timer (switch-off time).

Convenient Functions

Press the following buttons on the remote control handset	You will see this on the TV screen	Explanations

3.1 Blocking programmes unfit for children*

a) Enter code as four places.

OK

1 … 0

OK

b) Select "Lock programmes... yes

◀

c) Switch to TV mode.

i

You can block the broadcasts at any time.

If now a programme unfit for children is being broadcast, a table with respective hints appears on the screen.

Memorize the stored security code!
If you should forget the code, refer to the key on the last page (cover).

Before this, you must select a **non-blocked** programme position.

3.2 Blocking all programmes *

a) Enter code as four places.

OK

1 … 0

OK

b) Select "All programmes blocked yes".

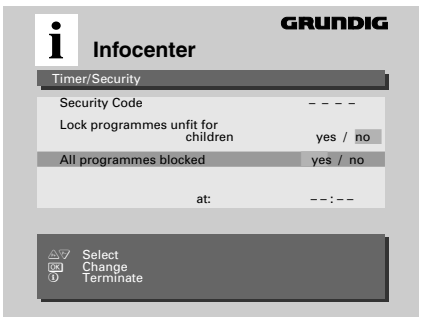
P–

◀ or ▶

c) Enter switch-off time (if desired)

P–

OK



After the television has been turned off (automatically or with the standby button ⏻), it cannot be used by unauthorized persons.

Memorize the stored code number!
If you should forget the code, refer to the key on the last page (cover).

Before this, you must select a **non-blocked** programme position.

The television switches off at a predetermined time and can only be turned on again when you enter your personal identification code .

* The steps 1 and 2 explained on page 21 must already be executed.

Press the following buttons on the remote control handset	You will see this on the TV screen	Explanations
1 … 0 OK d) Switch to TV viewing mode. i		The television automatically switches off at the programmed time and can only be used again when you enter your personal identification code.

3.3 Entering a switch-off time (Sleep Timer) *

a) Select "Sleep Timer". P– OK b) Enter switch-off time. 1 … 0 OK c) Switch to TV mode. i		The television automatically switches off (standby) at the programmed time.

* The steps 1 and 2 explained on page 21 must already be executed.

Special Functions

The "Special Functions" menu is divided into four menu items. In the "Settings" menu, you can carry out different basic settings. The "AV Connections" menu will be explained on page 28. The IR-Dataprogrammer and service functions are only for your dealer.

Calling up the Special Functions menu

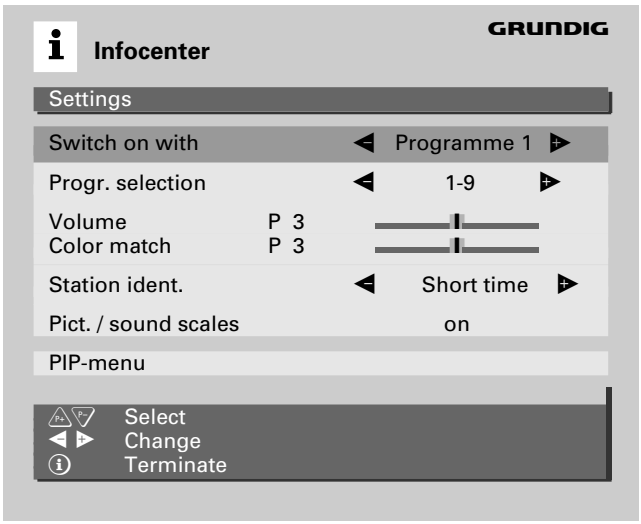
Call up the GRUNDIG Infocenter by pressing the ⓘ and OK button.

Continue to press the cursor button P− or P+ until "Special Functions" is highlighted.

Press the OK button.
The "Special Functions" menu appears.

Calling up the "Settings" menu

Press the OK button.
The line "Progr. selection" is highlighted.



Switch on with …

If you use the TV set frequently as AV monitor, for example together with a camera as supervisory system, you can use this function to give priority to the AV programme position. That means that after switching on the set the AV programme position will appear instead of the P1 programme position.

Select with P− and change the setting with ◀ or ▶.

Programme selection

One- or two-digit channel selection

If you have assigned less than 10 channel positions you should limit the programme selection to between 1-9.

Highlight the "Progr. selection" option with the P− button.

Press the ◀ or ▶ button to change the settings.

Restricting selection of channel positions concerns only the buttons ① - ⑨.
With the P+ button it is still possible to select all programme positions.

Volume

If you receive a programme whose volume deviates from other channels (too loud or too low), you can adjust the volume.

Press the P− button to highlight the "Volume" option. Change the volume with the ◀ or ▶ button. Only the volume of the programme currently being selected is changed.

Colour match

Highlight the "Color match" option with the P− button.

Use ◀ or ▶ button to change colour match. Only the colour match of the programme currently being viewed is changed.

Station identification

Highlight the "Station ident." option with the P− button.

Use ◀ or ▶ button to select whether the station name (eg. "ARD") is to be displayed always (on), briefly (short time), or not at all (off).

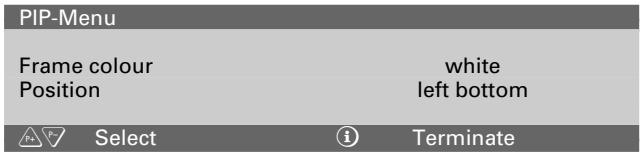
Picture/sound scale

Press the P− button to highlight the "Pict./sound scales" option.

Press the ◀ or ▶ button to display (on) or not (off) the respective scale on the picture screen, such as

The PIP menu

Call up the "Special Functions" menu as described on page 24 and select the "PIP-Menu" option.
Press the OK button to call up the PIP menu.



In the PIP menu, you can adjust the frame colour and the position of the small picture (see following chapter). Follow the hints in the dialogue line.

The PIP button

With this button you, can insert a small picture (freeze-frame) into the currently visible TV programme.
This small freeze-frame is continuously updated.

The contents of the small picture can be, for example, the signal from a video recorder, a camcorder, or the direct picture from a video camera.

How to proceed

For example, connect a video camera to one of the two AV sockets.
Select the corresponding AV position with the ❍ AV button.
Select the desired TV programme.
Press the ❍ PIP button.

The picture from the video camera is displayed as small freeze-frame over the TV picture and is continuously updated. Pressing the ⓪ AV button causes the TV programme being displayed as small picture.
Instead of the video camera, a video recorder can also be connected and its playback inserted as small picture. Pressing the ⓘ button or separating the external unit from the EURO-AV socket terminates this function.
See also the "AV monitor" chapter on page 26.

Special Functions in TV Mode

Freeze-frame

This "freezes" a picture during a current programme.

Press the **yellow** button.

Press the yellow button once more, or the ⓘ button to abort this function.

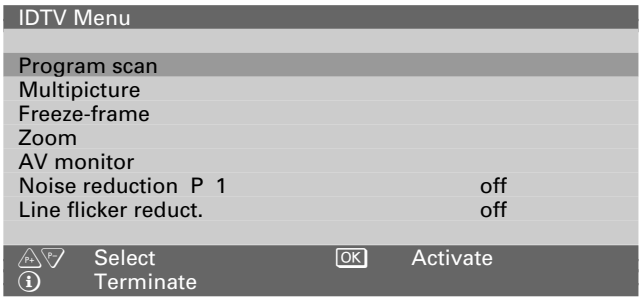
The freeze-frame function can also be selected in the IDTV menu.

The IDTV Menu

Program scan

This fun ction allows you to call up nine different programmes as small pictures (freeze-frame without sound) and the associated progamme names (abbreviations) on the picture screen.

Press the ❍ IDTV button to call up the IDTV menu.



Select the line "Program scan".

Press the OK button.

The small pictures are updated one after the other in brief intervals.

If you wish to select a certain programme out of the 9 offered channel positions, enter the number of this channel position with the numeric buttons ① - ⑨.

Press the ⓘ button or the ❍ IDTV button to end this function

The programme scan function can also be called up directly (outside the IDTV menu) by pressing the blue button.

Multipicture – Visualizing 9 small pictures

With this function, you can call up a series of 9 small pictures of the same programme - eight of them time-shifted - and display them on the screen.

Press the ❍ IDTV button to call up the IDTV menu.

Press the P− or P+ button to highlight the line "Multipicture" then press the OK button.

Press the ⓘ button or the ❍ IDTV button to end this function.

Freeze-frame

See page 25.

Zoom

With this function, you can select a section of the picture and enlarge then move it, including freeze-frames.

Press the ❍ IDTV button to call up the IDTV menu.

Select the line "Zoom" with the P− or P+ button.

Press the OK button.

The enlarged section of the picture can be moved by using the P− , P+ , ◀ or ▶ buttons.

Pressing the ⓘ button, the ❍ IDTV button, or changing to another channel position terminates this function

AV monitor

The television as a monitoring system

Example: You want to monitor a child´s bedroom with a video camera yet continue to watch television.

Proceed as follows:

1. Connect the video camera to the AV socket.
2. Select the corresponding AV-position with the ⓪ AV button.
3. Select the desired TV programme.
4. Press the ❍ IDTV button to call up the IDTV menu.
5. In the menu, select AV-Monitor and confirm with the OK button. The picture from the child´s room appears as a freeze-frame (small picture), and is thereafter continuously updated.
6. When the ⓪ AV button is pressed, the TV programme appears as small picture.

Repeat the steps 2 to 5 if you wish to have the TV programme as large picture again.
In place of the video camera, a video recorder can also be connected, and its tape contents can be displayed on the screen. Pressing the ⓘ button or separating the connected unit from the EURO-AV sockets ends this function.

Noise reduction

Noise reduction can improve the picture quality if the television/video signal source is poor.
In addition, colour disturbances (cross-colour) which occur on the fine vertical black/white lines, are also reduced.
Press ❍ IDTV to call up the IDTV menu.
Select the menu line "Noise reduction" with the P− or P+ button.
Using the ◀ or ▶ buttons, select :
Off = if the signal is good;
Auto = for slightly disturbed colour pictures, or
High! = This should only be used for pictures which are strongly distorted as otherwise "tracers" result when there are fast movements on the screen.
Press ⓘ to remove the menu from the screen.

Line flicker reduction

Television sets operate according to the interlaced scanning process, which means that two frames each are combined to one picture. This normally results in horizontal edges which move in 25 Hz cycles.
However, this 100 Hz television set reduces this effect.
This increase in picture quality is especially noticeable with cinema films.
When recording with an electronic camera, this function should only be used for films with little movement.

Test this function with a test pattern.

Naturally, edge flicker reduction can also be appreciated during playback of cinema films via a video recorder.

In addition, color stripes are also reduced during the search function on a video recorder.

Press the ❍ IDTV button to call up the IDTV menu.

Press the P− or P+ button to select the "Line flicker reduct." option.

Use the ◀ or ▶ button to switch the function on and off.

Press the ⓘ button to terminate the function.

Comb filter

When the PAL television system was introduced, it was the most superior system available. Even today it still offers excellent picture quality. However, the ability required at the time to receive black-white as well as colour broadcasts results in certain inadequacies in the form of the following picture disturbances.
The first disturbance is known as cross colour. This is observed as colour flickering on finely detailed objects (such as the flickering seen on materials with a hering-bone pattern, for example).
The second disturbance is known as cross luminance, and is observed as a nacreous streaking during colour transitions.

The comb filter can do away with these disturbances. Cross colour is eliminated, colour transitions are purer, and the picture is altogether sharper.

Call up the IDTV menu by pressing the ❍ IDTV button.

Select the comb filter with the P− or P+ button.

Using button ◀ or ▶ , you can choose between:

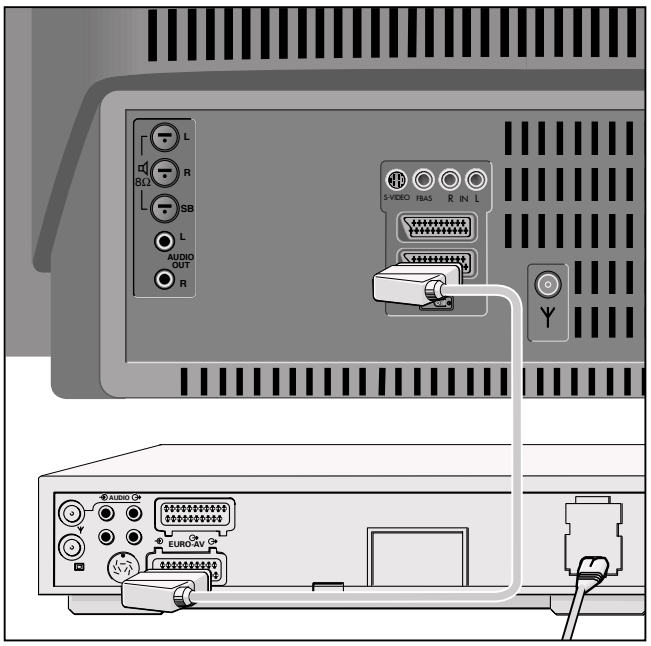
On = the comb filter is active during PAL- reception. The comb filter is automatically deactivated during video recorder operation. NTSC video operation is similarly enhanced as with PAL reception.

Off = the comb filter is off.

Press the ⓘ button to quit the IDTV menu.

Connection Capabilities and Operation …

…for Video Recorder



Connection

Connect the video recorder with an AV cable to the black or blue AV socket.

Video recorder connected to the black Euro-AV socket:

Repeatedly press the ⓪AV button until A1 appears.
Start video recorder playback.

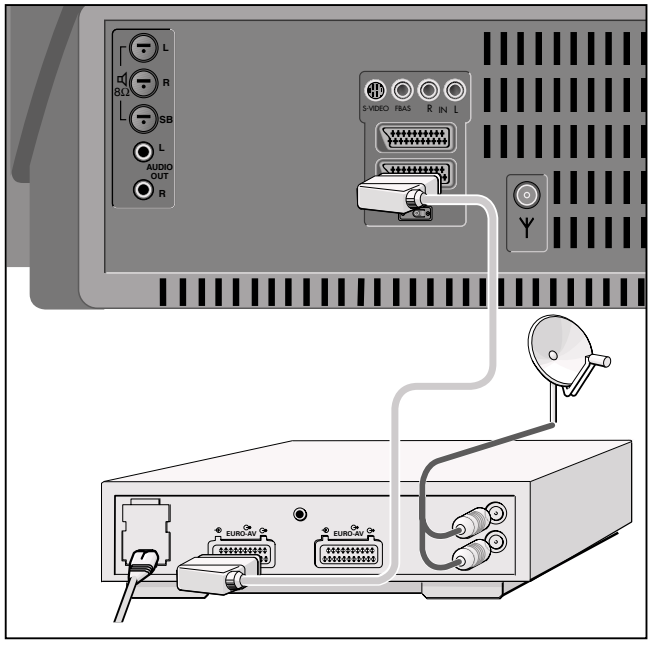
The picture/sound signal of the video recorder, which is connected to the black EURO-AV, can be switched to any channel position (refer to "Connecting a Descrambler", page 31).

Video recorder connected to blue AV socket:

Repeatedly press the ⓪AV button until A2 appears.
Start video recorder playback.

You can also connect an S-VHS recorder. In this case, you must select the A5 programme position with the ⓪AV button.

…for Satellite Receiver



Connection

Connect your satellite receiver to the black or blue AV socket using a suitable cable.

Operation

Repeatedly press the ⓪AV button until A1 or A2 appears.

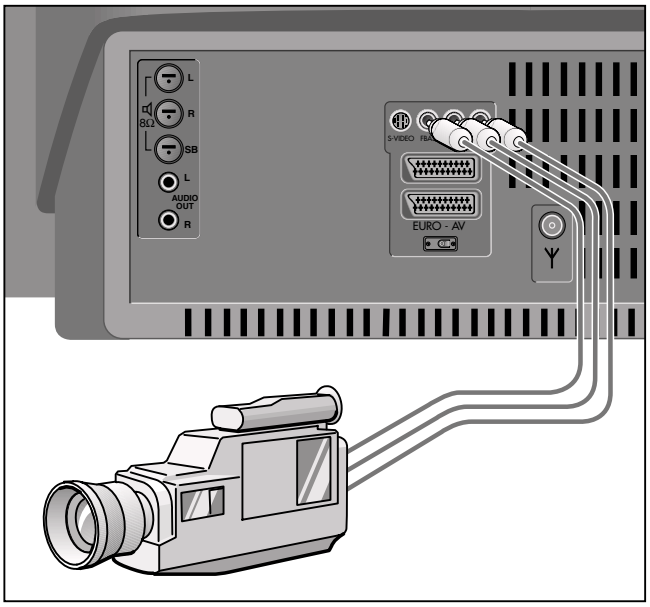
While keeping the ❍SAT button depressed, enter the desired channel position of the satellite receiver with the numbered buttons ⓪…⑨.

Reception of PALplus broadcasts via a satellite-receiver

Connect the satellite receiver to the black EURO-AV socket.
Select a free programme position on the television receiver.
Select "Descrambler on Stereo" (see page 31," ...for Descrambler").
The PALplus broadcast is visible on the selected programme position. Condition for this is that a 12V switching voltage is present at Pin 8 of the EURO-AV socket of the satellite receiver.
The same adjustments and the same condition apply for the use of a comb filter (see page 27).

Connection Capabilities and Operation ...

... for Camcorder (VHS, Video 8)



Preparation

Video signal

Connect the FBAS socket with the corresponding video socket of the camcorder.

Audio signal

Connect the R IN L sockets with the audio sockets of the camcorder. For mono plaback, connect the IN L socket with the corresponding socket of the camcorder.

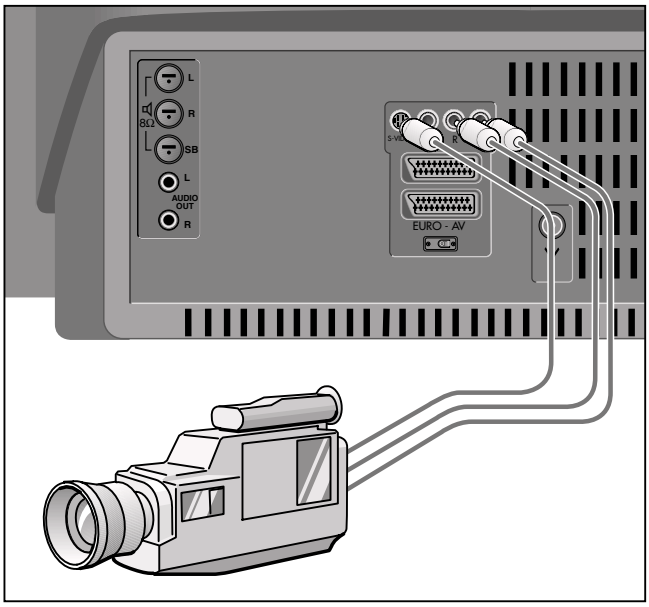
Repeatedly press the ⓪AV button until A3 is displayed.

Press the AUX and then the ❍▷ button.
"Mono A" is displayed on the picture screen.

Start playback on the camcorder.

The video playback from the camcorder is visible on the picture screen.

... for S-VHS Video Recorder, S-VHS Camcorder or Hi8 Camcorder



Preparation

Video signal

Connect the S-VIDEO socket with the corresponding video socket of the camcorder.

Audio signal

Connect the R IN L sockets with the audio sockets of the camcorder. For mono plaback, connect the IN L socket with the corresponding socket of the camcorder.

Repeatedly press the ⓪AV button until A3 is displayed.

Press the AUX and then the ❍▷ button.
"Mono A" is displayed on the picture screen.

Connection to the black EURO-AV socket

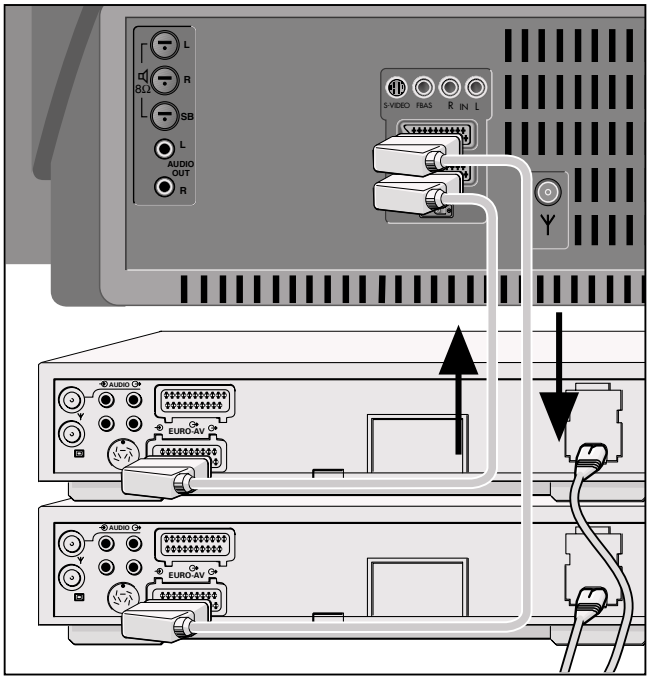
Repeatedly press the ⓪AV button until A5 is displayed.

Start playback on the video recorder or camcorder.

The video playback from the camcorder is visible on the picture screen.

Connection Capabilities and Operation …

Copying Video Recordings via the Television



You can copy from unit … to unit …:

Video recorder	→	Video recorder;
Camcorder	→	Video recorder;
S-VHS recorder	→	VHS recorder;
Hi8 camcorder	→	Video recorder;
S-VHS recorder (camcorder)	→	S-VHS recorder

from socket … to socket …:

A1 (black)	→	A2 (blue)
A3 (FBAS, phono socket)	→	A2 (blue)
A4 (S-Video, Hosiden socket)	→	A2 (blue)

Example of connection

Playback recorder to black Euro-AV socket
or
camcorder to FBAS socket (connect the sound from the camcorder to the R IN L phono sockets)
or
S-VHS or Hi8 camcorder to the S-VIDEO socket (connect the sound from the camcorder to the R IN L phono sockets).
Connect the recording recorder to the blue AV socket.

Operation

Use the ⓪AV button to select the desired input socket:

A1 = Euro-AV socket (black); indication A1
A2 = blue socket; indication A2
A3 = FBAS socket; indication A3.
A4 = S-VIDEO socket; indication A4.

When connecting to the sockets allocated to programme position (indication) A3, the sound signal must separately be passed via the two phono sockets R IN L.

Press the AUX and then the ⓪AV button.

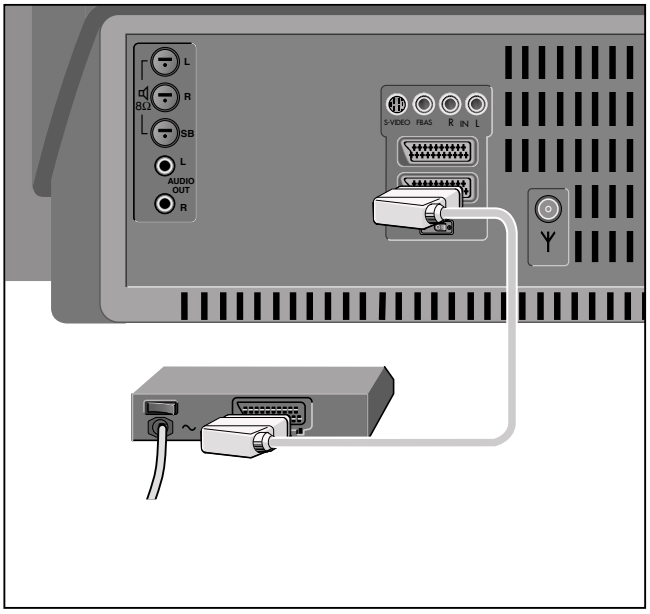
"Copy" is displayed on the picture screen. You now can watch any programme on the television without disturbing copying.

Clearing the "Copy" function:
Select the AV programme position allocated to the playback recorder by means of the ⓪AV button.

Press the AUX and then the ⓪AV button.

Connection Capabilities and Operation ...

... for Descrambler (Decoder)



Certain television stations scramble their programmes, meaning that the sound and picture signals your television receives are purposely distorted. You can unscramble such transmissions with a decoder.

Connection

Connect your decoder to the black EURO-AV socket and switch it on.

Operation

If the Premiere programme was stored when assigning channels with the "ATS euro plus" function, the necessary settings for this channel position are automatically adjusted.

On your television, select the scrambled channel position.

Press the AUX and then the 0 AV button.
The current setting appears.
By repeatedly pressing the 0 AV button you can select the following functions:

"Descrambler off" (switching voltage is not evaluated).

"Descrambler on Auto"
Automatic switching to mono, stereo, two-channel broadcasts. This depends on the broadcast received via the aerial.

"Descrambler on Stereo"
The left and right sound channels are switched through to the speakers.

"Descrambler on Mono-L"
For mono-L, the left sound channel is switched to both speakers.

"Descrambler on Mono-R"
For mono-R, the right sound channel is switched to both speakers.

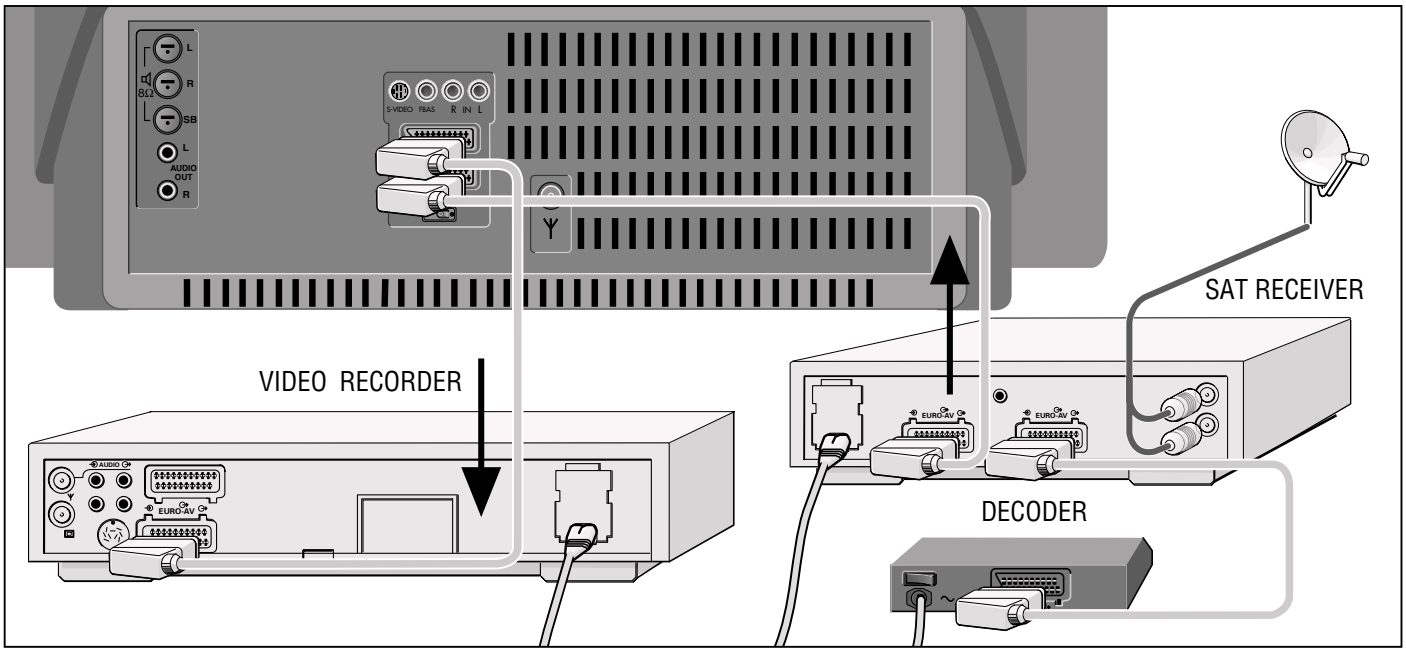
The scrambles programmes are routed from the television to the decoder, are descrambled, and then are routed back to the television, where the unscrambled signals can be viewed as a normal television programme.

The blue AV socket is used for recording with a video recorder. If a channel position is to be set up for which decoder operation may be unsuitable, press the AUX and then the 0 AV button until "Descrambler off" appears.

Connection Capabilities and Operation …

… for Video Recorder | **… for Satellite Receiver** | **… for Descrambler (Decoder)**

… for 12 V Power Supply (Mains Unit)



…with several external units

If you wish to connect several external units, for example, decoder, satellite receiver, video recorder, then make the connections as shwon in the above example.

Satellite TV reception
Descrambler ⟶ satellite receiver ⟶ TV receiver
(AV 1 socket).
Connect the video recorder to the AV 2 socket.

Cable TV reception
Descrambler ⟶ video recorder ⟶ TV receiver
(AV 1 socket)

Example

You wish to record a satellite programme.

Operation

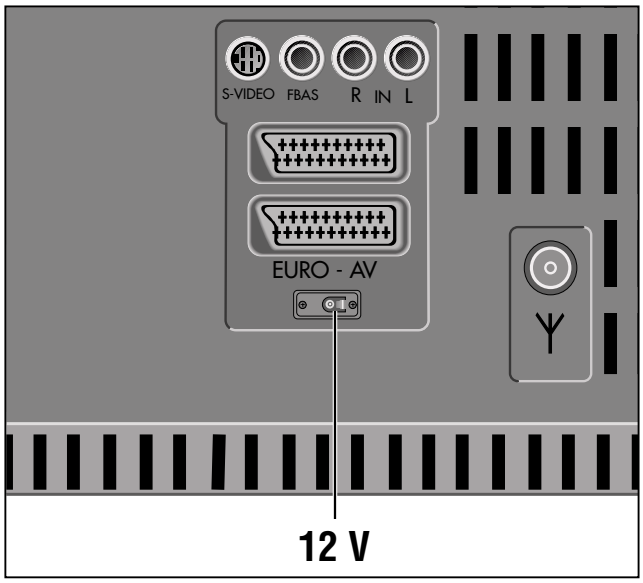
Select programme position A1 with the ◯AV button.
Select the desired satellite programme by pressing and holding down the ◯SAT button while entering the programme position of the satellite receiver with the numeric buttons ⓪...⑨.
Start the recorder.

12 V input

12 V d.c. input socket, for example, for the connection of a commercial mains unit.

This is necessary, for example, when recording from a satellite receiver with the TV set switched off (loop-through mode).

Switching the television on during recording will interrupt the recording.



Specification

Mains Voltage:

220-240 V, 50/60 Hz
(Power supply control range 190 … 264 V)

Power Consumption:

Approx. 200W
In stand-by 5 W

Channel Coverage:

C01 … C99
Special channels S01 … S41

Sound Output:

WithoutDolby: 80 W active music power
(60 W sine power = 2×12.5+35)

In Dolby mode: 120 W active music power
(75 W sine power = 2×12.5 W for built-in loudspeakers;
2×12.5 W ext. front boxes;
2×12.5 W ext. surround boxes)

Service Note for the Dealer:

This unit is provided with a pluggable power supply cable. For replacements, contact the nearest customer service centre and always indicate the following order number: 8290-991-307.

This unit conforms to VDE safety regulations and directives of the Deutsche Bundespost (German Federal Post Office; see certification mark on the type sticker on the rear of the unit), as well as all relevant ordinances governing X-ray emissions. The picture tube, which emits X-rays, is sufficiently shielded and therefore represents no danger. Accelerating voltage is a max. 34 kV/ with a mean beam current of 1.6 mA. This unit is provided with an intrinsically safe cathode ray tube in accordance with Appendix III of the applicable X-ray ordinances.

Unauthorized tampering with the unit, in particular making adjustments to the high voltage system, or installing a different picture tube, can considerably increase X-ray emissions. Units so altered no longer conform to applicable safety regulations and may not be operated.

Supplied Accessory:

2 Surround Boxes with cables and connectors.

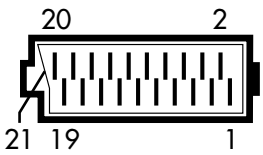
Optional Accessory:

BoxesPD 1 (as front boxes for DOLBY PRO LOGIC mode).
For installation and connection, see pages 13 and 14.

Pin Assignment of EURO-AV Socket

If you want to connect other devices to your television (for example, a computer or amplifier), your dealer can provide you with a standard connection by means of the following table:

Pin		Signal
1	=	Audio output right
2	=	Audio input right
3	=	Audio output left
4	=	Audio, earth
5	=	Blue, earth
6	=	Audio input left
7	=	RGB blue input
8	=	Switching voltage
9	=	Green, earth
10	=	–
11	=	RGB green input
12	=	–
13	=	Red, earth
14	=	Earth
15	=	RGB red input
16	=	RGB switching voltage
17	=	Video, earth
18	=	RGB switching voltage, earth
19	=	Video output
20	=	Video input
21	=	Shielding/earth



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